

CLAIMS

What is claimed:

1. A portable foldable arched ramp assembly comprising:
 - (a) a plurality of adjacently positioned step links, each of said step links having a pair of compression members formed on opposing transverse ends of said step links; and,
 - (b) a plurality of hinge pins passing transversely through said plurality of step links for permitting connection of and rotation of one of said step links with respect to an adjacent one of said step links, said pair of compression members of one of said step links abutting said pair of compression members of an adjacent step link when said adjacent step links are rotated to a pre-determined angle, thereby fixedly positioning adjacent contiguous step links one to the other.
2. The arched ramp assembly as recited in Claim 1, wherein said each of said plurality of step links further comprises:
 - (a) an upper surface wherein said compression members extend substantially perpendicular from said upper surface;
 - (b) a lower surface with a plurality of support ribs formed thereon extending from a first longitudinal side to a second longitudinal side,
 - (c) a plurality of regularly spaced substantially cylindrical knuckles formed on each of said longitudinal first and second sides and adapted to permit said knuckles formed on a first longitudinal side to complementarily interdigitate

with said knuckles formed on a second longitudinal side of an adjacent step link, each of said substantially cylindrical knuckles further defining a channel transversely positioned and adapted to slidingly receive one of said plurality of hinge pins; and,

(d) a plurality of protrusions, each formed on an outer surface of each of said plurality of knuckles, said protrusions being oriented in a substantially transverse direction and positioned to abut the transverse side of an adjacent step link when said assembly is fully deployed so as to impart a non-planar relation between contiguous step links.

3. The arched ramp assembly as recited in Claim 2, wherein each of said compression members is comprised of an upper side with a pair of upper ends and a lower side with a pair of lower ends, and a pair of vertical abutment sides with a top end and a bottom end, so that said top ends of said vertical abutment sides connect to said upper ends of said upper side and said bottom ends of said vertical abutment sides connect to said lower ends of said lower side, wherein a distance between said upper ends is greater than a distance between said lower ends, imparting to said compression members a keystone shaped profile, and the vertical abutment sides of said compression members of a first step link abut the vertical abutment sides of said compression members of an adjacent step link so as to impart to said ramp assembly an arcuate profile with a pre-determined radius of curvature in the range of 80 to 125 inches.

4. The compression members as recited in Claim 3, wherein each of said compression members further comprises a recess defined by said upper surface and said lower surface and said vertical abutment sides, said recess divided by a plurality of truss elements each of which connect to said upper side and said lower side, and forming thereby an open truss structure.
5. The compression members as recited in Claim 4, further comprising a wall member consisting essentially of a surface with a pair of substantially horizontal edges connected to said upper side and to said lower side, and a pair of substantially vertical edges connected to said vertical abutment sides of said compression members, wherein said wall member is positioned medial to and integral with said truss elements.
6. The arched ramp assembly as recited in Claim 1, wherein a first bumper member is fixedly attached to a first end of said assembly and a second bumper member is fixedly attached to a second end of said assembly, said first and second bumper members on said assembly being positionable between a first surface and a second surface respectively.

7. The arched ramp assembly as recited in Claim 1, wherein each of said plurality of hinge pins further comprises a tube with a length substantially equal to a width of said step links, and a pair of endcaps wherein each of said endcaps is adapted to be seated on an end of said tube.

8. The arched ramp assembly as recited in Claim 1, wherein said assembly is made from a material chosen from the group consisting of plastic, glass, elastomer, carbon fiber, metal alloy, wood, and a combination thereof.

9. The arched ramp assembly as recited in Claim 1 wherein said ramp assembly further comprises a number of step links in a range of 12 to 20.

10. The arched ramp assembly as recited in Claim 2, wherein each of said plurality of knuckles has formed on an outer surface a transversely oriented protrusion to restrict rotatory movement to an arched extended condition, and to permit an opposite rotatory movement to a folded rolled-up condition.

11. The arched ramp assembly as recited in Claim 9, wherein said folded rolled-up condition has an outside diameter in a range of 12 to 20 inches.

12. The arched ramp assembly as recited in Claim 2, wherein said upper surface of a step link member further comprises a raised cleat portion adapted for increasing traction of a user.

13. The arched ramp assembly as recited in Claim 1 further comprising means for reversibly joining along a longitudinal aspect a first arched ramp assembly to a second arched ramp assembly.

14. The arched ramp assembly as recited in Claim 1 further comprising a mounting means connected to an end of said arched ramp assembly to be reversibly secured to a platform, for reversibly and fixedly stowing said ramp assembly to said platform.